

USAWC STRATEGY RESEARCH PROJECT

LONG TERM BUDGETARY IMPLICATIONS OF TODAY'S ARMY DECISIONS

by

Robert M. McCaleb
U.S. Army

Henry M. St. Pierre
Project Advisor

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ABSTRACT

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This paper focuses on the long-term budgetary implications of the decisions that Army leaders are making today. Specifically, it investigates whether there are adequate resources (means) in the decades ahead to execute the strategy (ways) to achieve the Army's transformational goals (ends). This ends, ways, and means analysis is conducted in light of the tremendous discretionary spending pressures on the federal budget that will begin at the end of this decade due to demographic changes. The evidence suggests that the ends, ways, and means of Army transformation are not in balance. The Army's transformation strategy is not framed within fiscal realities and hence, the strategy is at risk.

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LONG TERM BUDGETARY IMPLICATIONS OF TODAY'S ARMY DECISIONS

But the reality is that the bow wave that exists out there is of sufficient magnitude that reasonable people would say the time to fix that, the time to correct it, the time to affect it, is now. The reason for that is if you're walking towards a wall and you decide you want to go to the opposite wall, the sooner you make the correction the easier it is. If you wait until you're right face up against the wall then you've got to make a sharp turn and get out of there. So it's the same thing here. Now, today, you can make relatively modest corrections that will have very favorable effects on the bow wave and will allow you to approach it in a much more rational and sensible way. Every year you wait until you're closer to it requires a much more severe change. When I say severe, severe can mean wrenching. It can also mean harmful to people, because the longer you allow things to go on that aren't ultimately going to happen, the more people's lives are affected by it.

—Secretary of Defense Donald Rumsfeld, 24 June 2002

The Army is a very busy organization today. It is fighting a global war on terrorism while trying to transform, which includes restructuring units (brigades, divisions, and corps), increasing its force structure by 30,000, and fielding new equipment. The Army Chief of Staff, General Schoomaker, has stated that the global war on terrorism is the Army's primary concern and has adjusted the Army's priorities to reflect his emphasis on current operations.¹ This change in Army priorities combined with the unprecedented operational tempo of all Army units, Active and Reserve, entail many important decisions. These decisions, whether they involve weapon systems, unit compositions, or numbers of personnel, have long-lasting budgetary consequences.

PURPOSE

This paper focuses on the long-term budgetary implications of the decisions that Army leaders are making today. Specifically, it investigates whether there are adequate resources (means) in the decades ahead to execute the strategy (ways) to achieve the Army's transformational goals (ends). This ends, ways, and means analysis is conducted in light of the tremendous discretionary spending pressures on the federal budget that will begin at the end of this decade due to demographic changes. The evidence suggests that the ends, ways, and means of Army transformation are not in balance. The Army's transformation strategy is not framed within fiscal realities and hence, the strategy is at risk.

RELEVANCE

Resources are always finite. If the Army pursues a transformation strategy that is not affordable in the long-run, although it may be affordable over the short to mid term, the Army may spend a lot on the development of programs that will never be produced. Crusader and Comanche are examples of two acquisition programs in which the Army invested billions of development dollars and reaped very little in final products although the Army was able to integrate Crusader and Comanche technologies into other programs. Dollars that are spent on programs that are eventually terminated, whether these programs become unaffordable, technologically infeasible, or not needed, are dollars that could have been spent on other Department of Defense needs. In other words, they represent lost opportunities.

Currently, the Army should be especially cognizant of potential lost opportunities for two reasons. First, the Army is investing a significant portion of its research, development, and acquisition funding in one program called the Future Combat Systems (FCS). This will be discussed in detail later. If FCS has the same fate as Crusader and Comanche, it could represent an unprecedented lost opportunity in terms of investment dollars. Second, the Army can now foresee the fiscal constraints on the federal budget that will be occurring at the same time that FCS should be in production.

The Secretary of Defense, Donald Rumsfeld, is concerned about these potential lost opportunities caused by the increasing demand for defense resources beyond the Future Years Defense Plan (FYDP).² The Pentagon's term for this increasing demand phenomenon is called the bow wave. The Congressional Budget Office (CBO) makes long-term projections (through 2022) of the funding implications of the current defense plans. Its latest projection, which is shown in Figure 1, corroborates the bow wave concern. It indicates that if the 2004 FYDP is carried out as currently envisioned, the inflation-adjusted demand for defense resources would steadily increase through 2022 and stay at higher levels over the long-term than defense spending has ever reached since 1980.³

Billions of 2005 Dollars of Total Obligational Authority

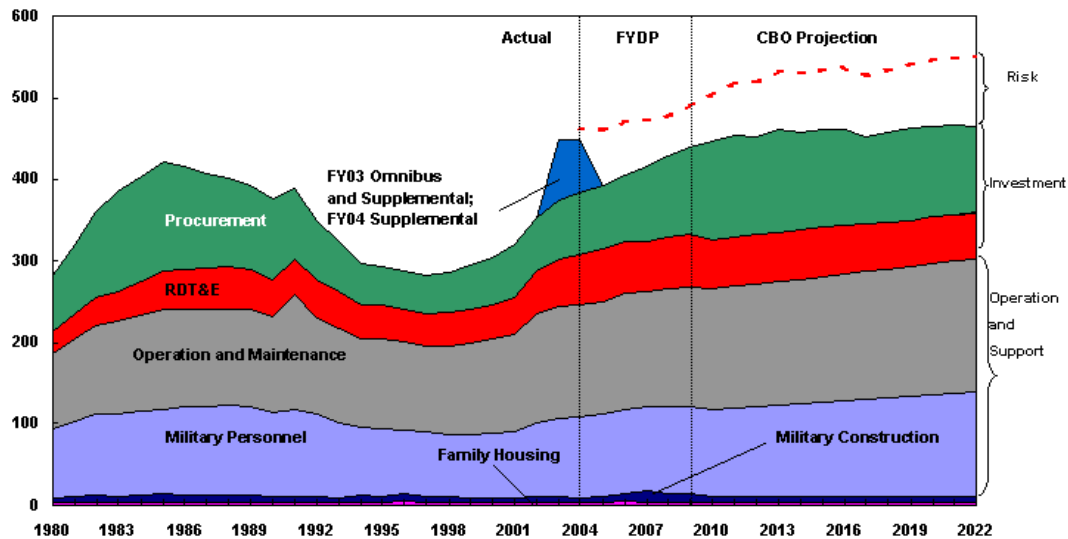


FIGURE 1. PAST AND PROJECTED RESOURCES FOR DEFENSE (THE BOW WAVE)

Secretary Rumsfeld made the following statement in regard to his concern about the bow wave and the need to recognize the long-term implications of programs in their early stages of development:

Well the task, of course, for the Department of Defense is to look out over a period of years ...and anticipate how those budgets might evolve. To the extent one looks out there today, it's pretty clear that there are an awful lot of programs in the incubation stage that as they mature and develop and grow and move from research and development into production, that the cost would be significant, and that's, in the aggregation of those costs for all of those programs is what he referred to as the bow wave, and what the department has to do is what any business would have to do or any family would have to do and that is to make plans early as to how you want those programs to interact and how you're going to be able to manage the cost that you're currently beginning the process of generating. So a correction made early saves a big problem in three or four or five years.⁴

BACKGROUND

GENERAL SHINSEKI'S INITIAL STRATEGY

General Schoomaker's predecessor, General Shinseki, initiated an ambitious Army transformation plan in 1999. General Shinseki's initial vision was to transform the Army's current units, the Legacy Force, into new organizations with new equipment called the Interim

and Objective Forces. The Interim Force would be comprised of six Stryker Brigade Combat Teams (SBCTs) equipped with the Stryker family of vehicles. The most demanding part of the transformation plan was the eventual conversion of all Legacy and Interim Forces into new brigade-sized units of action equipped with FCS. FCS is a single acquisition program that has been described as the most ambitious in the Army's history.⁵

The Army describes FCS as a networked system of 18+1+1 systems, which is broken out as follows: 18 individual systems, plus the network (18+1), plus the Soldier (18+1+1). The 18 individual systems consist of unattended ground systems (UGS); two unattended munitions described as the Non-Line of Sight Launch System (NLOS-LS); Intelligent Munitions System (IMS); four classes of unmanned aerial vehicles (UAVs); three classes of unmanned ground vehicles—the Armed Robotic Vehicle (ARV), the Small Ground Vehicle (SUGV), and the Multifunctional Utility/Logistics and Equipment Vehicle (MULE)—and the eight manned ground vehicles.⁶

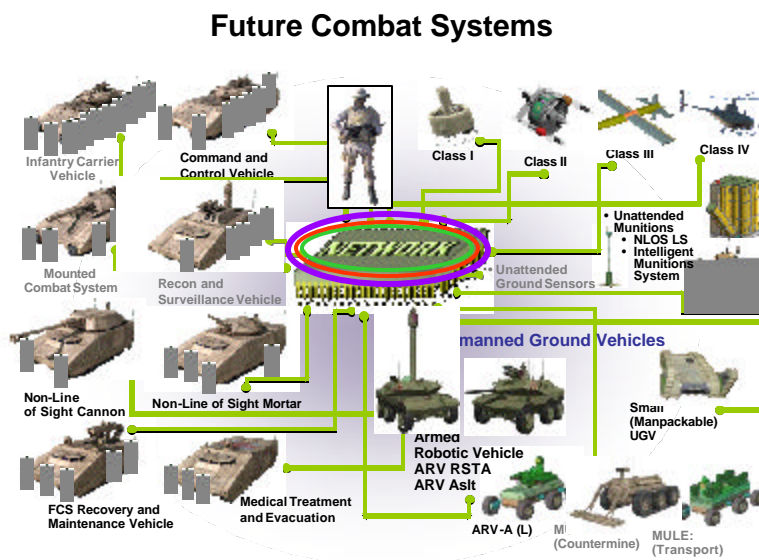


FIGURE 2. FCS DESCRIPTION⁷

General Shinseki recognized the complexity of this program from the beginning—especially the affordability challenges. To find the resources to develop FCS, Shinseki's plan clearly emphasized the Interim and Objective Forces at the expense of the Legacy Force. In

each of the past five budget submissions, the Army made difficult choices to cancel and restructure legacy programs.⁸ This allowed the Army to reallocate resources to develop transformational capabilities. Most notably, in the Program Objective Memorandum (POM) 04-09, the Army terminated or reduced 48 programs associated with the legacy force to provide over \$22 billion for Army transformation.⁹ The terminations included the Abrams tank and Bradley fighting vehicle upgrade programs. General Shinseki believed he could assume risk in the legacy force because he planned to rapidly convert the entire active **and** reserve Army into the FCS-based objective force in 30 years (assuming three units of action are fielded per year).¹⁰

At the FCS Milestone B decision¹¹ in May 2003, it became clear that Army transformation would take longer and cost more than General Shinseki's initial vision. The Army announced that FCS would be fielded in at least two increments due to affordability and technological maturity concerns. As part of the Milestone B decision, the Department of Defense approved the development of the first increment. This increment included only 14 of the desired 18 systems. The Army decided that it was unaffordable to develop and field one of the manned ground vehicles, two classes of UAVs, and the Intelligent Munitions System.¹²

The cost to equip each unit of action with only 14 of the desired 18 FCS systems would be approximately \$4.5 billion, which was twice the original planning estimate.¹³ Due to the higher cost, the Army reduced its estimated rate of conversion from three units of action per year to two. However, the Army acknowledged there would be difficulty fielding even two per year because this rate would cost \$9 billion per year, which is nearly all of the Army's total procurement amount in Fiscal Year 2005 (the Army has to buy other things too). This conversion cost (\$9 billion per year) is also significantly greater than the level of FCS funding in its current Future Years Defense Plan (FYDP).¹⁴ The Army's "Milestone B" plan was to equip the first 15 units of action with Increment I FCS. Therefore, it would take between 16 to 24 years (assuming fielding rates between one to two units of action per year) to replace only one-third of the Army's brigades with units of actions equipped with a less-than-capable FCS.

GENERAL SCHOOMAKER'S CHANGES TO THE STRATEGY

One of the main reasons General Shinseki initiated the Army transformation plan in 1999 was that he saw an historic opportunity to transform in a time of peace and prosperity.¹⁵ He also realized that transformation must happen quickly because the window of historic opportunity would grow narrower with each passing day. Today, General Schoomaker does not have the luxury of transforming the Army in a time of peace. The strategic and operational

environment has significantly changed. The Army is at war with conventional and unconventional forces, and can no longer accept risk in the current force.¹⁶ As mentioned earlier, Schoomaker has adjusted Army transformation plans to reflect his emphasis on current operations. His objectives (ends) still include the continued emphasis on FCS as the Army's long-term solution to replacing current forces, but his short-to-midterm priorities have shifted to the current force. The highlights of the adjustments are that:

- The Army will accelerate the fielding of select future force capabilities into the current force.¹⁷ The blending of future technologies into the current force is a significant shift from Shinseki's initial vision, which made a clear distinction between Legacy (i.e., current) Forces and Objective (i.e., future) Forces. In other words, Shinseki's vision and budget did not include the fielding of future (FCS-like) technologies to the current forces. Schoomaker's plans continue FCS and add FCS equipment and capabilities to the current force. Almost 75 percent of all Army brigade-sized units of action will have some FCS capabilities by 2014.¹⁸
- The Army will restructure to more modular, capabilities-based units to better meet Combatant Commanders' requirements.¹⁹ The Army's plan is to shift from a structure based on large divisions to one based on modular and smaller brigade combat teams. This restructuring demands a lot of resources in today's budget. In fact, the President's 2006 budget includes an additional \$25 billion for Army modularity over the next six years.
- The Army will increase the number of active maneuver brigades from 33 to 43.²⁰ The additional brigades will increase the size of the Army's rotational base and thus, relieve some of the stress on the active force due to increased operational tempo today and into the future. The President's 2006 budget commits \$48 billion through 2011 to expand the number of brigades from 33 to 43.²¹ The Army is also considering increasing the number of brigades even more to 48.
- The Army will increase the size of the Army by 30,000 soldiers.²² The additional soldiers are necessary to man the additional brigades and mitigate stress on the active force. Currently, the increase is temporary and funded by Congressional supplementals. However, the President's 2006 budget would make the increase permanent starting in fiscal year 2007 (implying that Congressional supplements must cover the increase until fiscal year 2007).²³ The additional 30,000 soldiers will cost the Army an additional \$3 billion per year starting in fiscal year 2007.

- The Army will delay the fielding of the initial FCS-equipped unit of action from 2010 to 2014.²⁴ The Army calculated that there was only a 28 percent chance to field the initial brigade by 2010. General Schoomaker stated that there is a 70 percent chance of achieving the new fielding objective.²⁵
- The Army will field all 18 FCS systems with the initial FCS-equipped unit of action (rather than 14 of the 18 systems).²⁶ The increase in development time (i.e., fielding is delayed until 2014) and the additional scope of the initial fielding (i.e., initially fielding all 18 of the FCS systems instead of just 14) will add approximately \$6.4 billion to FCS's development cost (from the Milestone B estimate of \$19.4 billion).
- The Army is planning to field one FCS-equipped unit of action in 2014, one in 2015, and two per year thereafter.²⁷ If the Army could execute its plans, the steady-state fielding rate would be only two brigades per year compared to Shinseki's desired three brigades per year.

General Schoomaker has made other adjustments to the Army's transformation plans. However, the adjustments described above are the most significant "ways" that will be evaluated in this paper. They reflect the most important "current decisions" that will have long-term budgetary implications.

General Schoomaker realizes that his current decisions are aggressive, but he believes an aggressive transformation strategy is necessary because there is a narrowing window of opportunity to transform the forces. The window is narrowing because there will be increasingly heavy pressures on the budget,²⁸ and because congressional support through supplement appropriations will not continue indefinitely.²⁹ Congress is currently providing supplemental appropriations to mitigate the risk to the current forces caused by ongoing operations in Iraq and Afghanistan.

THE FEDERAL BUDGET OUTLOOK

General Schoomaker's concern about increasingly heavy pressures on the Army's budget is valid. The demographic changes caused by population aging and increased longevity could generate severe spending pressures over the next 10 to 20 years.³⁰ The leading edge of the baby boomer retirement wave will begin in 2011 (76 million baby boomers were born in the years 1946-1964).³¹ Additionally, life expectancies will continue to rise. The current life expectancy at age 65 is around 17 years.³² According to the Census Bureau, this life expectancy will rise at a steady rate of one year per decade.³³ These demographic changes will cause Social Security and Medicare programs, which are already big, to get even bigger.

The CBO states that this year's federal budget deficit will reach a record \$422 billion and projects that the government will accumulate \$2.3 trillion in new debt over the next 10 years.³⁴ Social Security and Medicare, which currently comprise 34 percent of the federal budget, will increase to 42 percent of the budget during the baby boomer retirement wave.³⁵ During the next 75 years, the government must find \$43 trillion to cover the gap between promised benefits (in Social Security and Medicare) and anticipated revenues.³⁶

Since the mandatory spending demands on the federal budget, like Social Security and Medicare, are significantly increasing, the available resources for discretionary spending will decrease unless the government is willing to accept steep tax increases or significantly larger budget deficits. The CBO produced the following graphic that displays its projection of the decreasing proportion of discretionary spending.³⁷

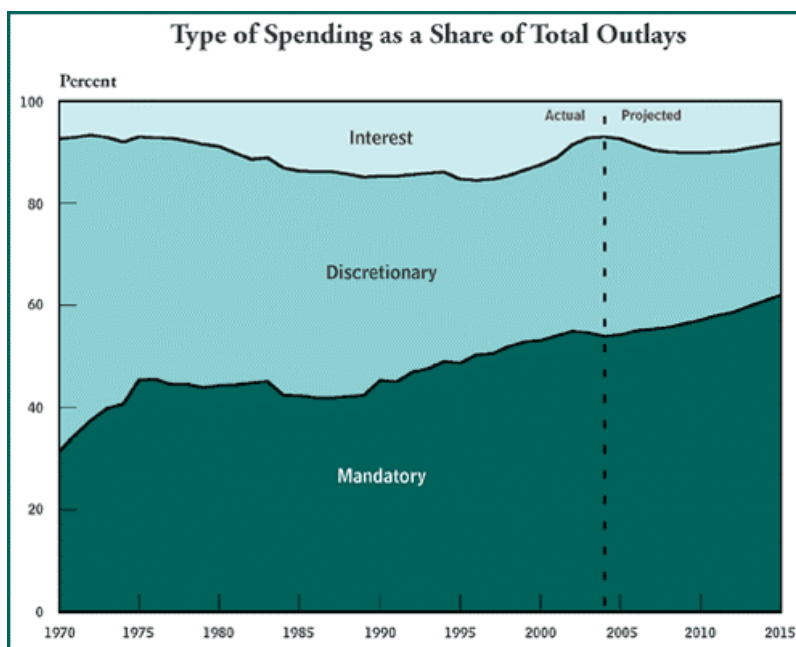


FIGURE 3. DISCRETIONARY PROPORTION OF FEDERAL BUDGET IS SHRINKING

Since the discretionary spending portion of the federal budget will most likely shrink over the long-term, the non-defense discretionary priorities in areas such as education, transportation, and health research will compete with defense spending for the shrinking

discretionary portion. Historically, Congress tends to favor non-defense discretionary priorities over defense priorities when discretionary proportions are shrinking. Congress reduced defense spending by 12 percent between Fiscal Year 1985 and Fiscal Year 1990 to reduce deficits.³⁸ Since 1962, non-defense discretionary spending has increased (almost steadily) by 290 percent while defense spending has fluctuated cyclically.³⁹ Using data from the CBO, the Heritage Foundation produced the following graph that projects how government spending will squeeze defense spending over the long term.⁴⁰

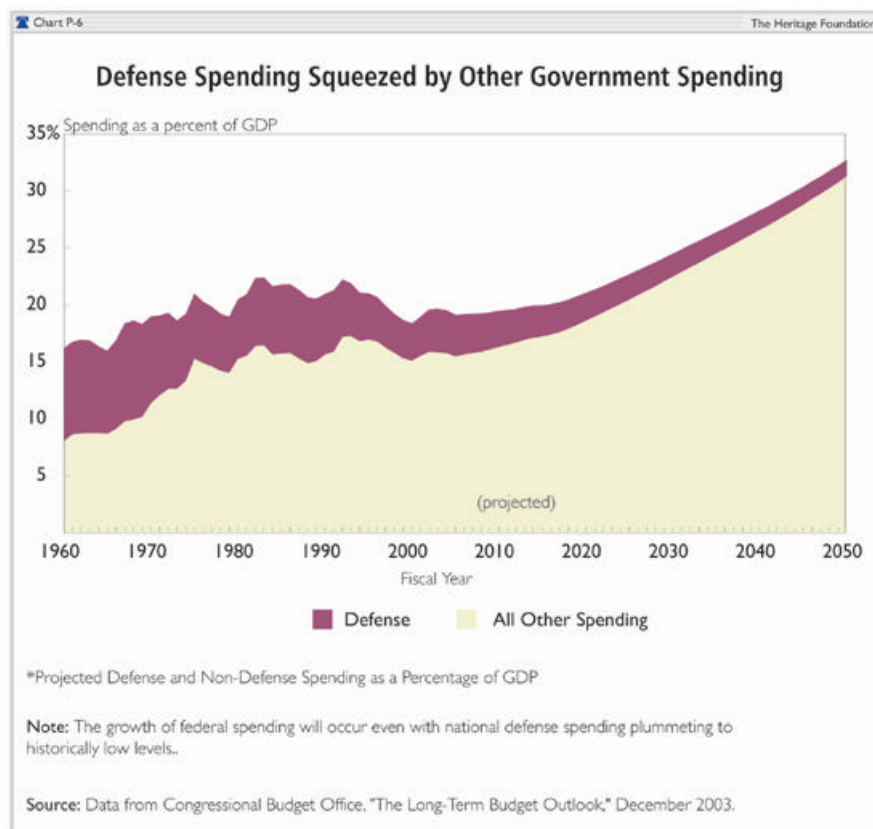


FIGURE 4. SHRINKING RESOURCES AVAILABLE FOR DEFENSE

Even over the mid term (2007 to 2011), the Department recognizes that defense spending increases will be constrained. Ryan Henry, principal deputy under secretary of defense for

policy, recently said that any changes recommended by the 2005 Quadrennial Defense Review (QDR) must be paid for by reduced spending in other parts of the defense budget.⁴¹ In other words, the 2005 QDR must be resource-neutral.

LONG-TERM AFFORDABILITY

LONG-TERM AFFORDABILITY ASSESSMENTS

Determining the long-term affordability of programs is a very subjective exercise. At one extreme, analysts could say that nothing is affordable based on the looming bow wave beyond the FYDP. Any proposal to add programs would be unaffordable since there is no flexibility beyond the FYDP. At the other extreme, analysts could say that anything is affordable because this nation has tremendous resources and currently allocates only 3.7 percent of its Gross Domestic Product (GDP) for defense spending (the average was six percent in the 1980s).⁴²

In 1998, the Under Secretary of Defense (Acquisition and Technology) provided clear guidance on how to conduct long-term affordability assessments, and directed the services to conduct these assessments for selected major acquisition programs.⁴³ The idea was to consider programs within the context of the appropriate mission areas and appropriations. Although the current acquisition directive does not require these long-term affordability assessments, this paper will apply the 1998 guidance to assess the long-term viability of the Army's current plans. The guidance directed the services to:⁴⁴

- Examine the demands for investment funding across mission areas and appropriations related to the program through a period twelve years beyond the FYDP.
- Relate investment funding demand to historical averages for the selected mission areas and appropriations.
- Highlight those areas where funding demands exceed historical averages or zero real growth from the last year of the current FYDP.
- Provide details as to how excess funding demands will be avoided or accommodated by offsets in other mission areas, investment appropriations or non-investment funding.

DEMANDS FOR FUNDING BEYOND THE FYDP

The demand for Army funding beyond the FYDP is extremely high. In the Army's investment area, which includes research, development, test, evaluation, and procurement, the CBO makes the following projection:⁴⁵

Billions of 2005 Dollars of Total Obligational Authority

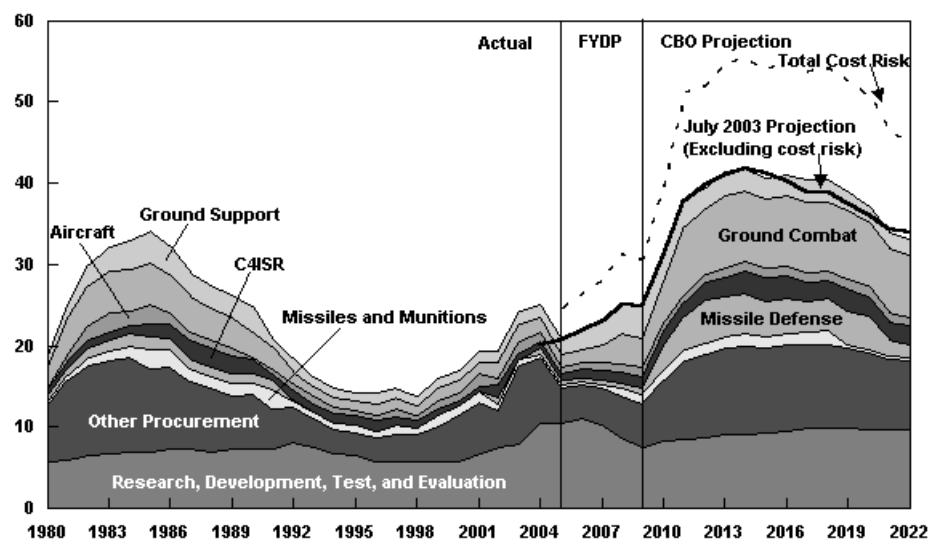


FIGURE 5. ARMY INVESTMENT PROJECTION

CBO's projections assume that future investment costs will be the same as DoD's current estimates of them. The "cost risk" dotted line in the above projection takes into account that DoD often underestimates the cost of new weapons. In fact, the largest source of underestimation is, historically, ground combat vehicles which typically experience 70 percent cost growth from early estimates.⁴⁶

CBO's cost risk projection indicates that the Army's demand for investment resources could exceed \$50 billion in 2015 (in 2005 constant dollars). This estimate is more than double the current level of \$22 billion. In addition, CBO's projection did not account for some of General Schoomaker's transformation adjustments. The following adjustments will exacerbate the Army's long-term investment demand: the insertion of FCS technologies and systems into the current force, and the increase in the number of brigades that must be transformed.

RELATING DEMAND TO HISTORICAL AVERAGES

Figure 5 illustrates the historical and projected Army investment levels. The peak projected demand, which is greater than \$50 billion around 2015, would exceed the historical peak of \$35 billion in the mid-1980s by more than 40 percent. Since the Cold War ended, the

Army investment average has been \$16 billion per year. For comparison, the “cost risk” projection of demand from the CBO would average \$53 billion over the 2010-2022 period.

CAN THE ARMY FIND OFFSETS TO AVOID EXCESSIVE FUNDING DEMANDS?

The Army will have a difficult time finding offsets in other mission areas or appropriations to avoid the projected excess funding demands in the investment area. The Army traditionally tries to fund its highest priority investment demands by terminating or restructuring lower priority investment programs. However, as previously mentioned, the Army has cancelled or restructured many programs in the last four budget submissions to fund FCS. Additionally, many of the remaining non-FCS programs, like Joint Tactical Radio System and Warfighter Information Network-Tactical, are needed for the future force to complement FCS (i.e., FCS can't operate without them).

The only other Army appropriations with sufficient resources to potentially offset the funding demands are Military Personnel (MILPERS), and Operation and Maintenance (O&M). They comprise over 70 percent of the Army budget. However, these appropriations have their own demand issues.

The Army's MILPERS funding must increase by at least \$3 billion per year beginning in fiscal year 2007 to cover the troop increase of 30,000 soldiers. Also, medical care costs will almost double over the next two decades. Across the Department of Defense, total medical costs will rise from \$33 billion in 2007 to \$55 billion in 2020.⁴⁷ Although Army appropriations do not directly fund military medical care, the MILPERS appropriation does fund health care accrual and would possibly be taxed to help pay for exorbitant spending demands in the Defense Health Care Program, which is the program that funds military health care.

The demand for O&M funding will also increase because the Army's current equipment will remain in the inventory for decades (i.e., it is aging), and the Army is fielding new equipment, which usually costs more to operate than the equipment it replaces (despite the advertisement from program managers). The CBO estimates that the combination of these two effects could increase the Army's annual O&M demands by \$14 billion by 2022.⁴⁸

The increased operating tempo due to current operations in Afghanistan and Iraq is contributing to significant wear and tear on existing equipment. The Defense Department just completed an “Equipment Stress Study,” which investigated equipment losses and repairs attributed to the Iraq war.⁴⁹ It concluded that the repair needs and losses will lead to significant bills in future years. The Army is betting on supplemental funding to cover the funding demands caused by the equipment stress. However, it will be at least two years after the operations in

Iraq end before the Army can replace what it has lost.⁵⁰ The Army's acquisition executive, Claude Bolten, is concerned that he has never seen Congress provide two additional years of supplemental funding after a conflict has ended.⁵¹

The Army's remaining sources for offsets are the other services. The distribution of the Department of Defense's budget pie will probably be assessed in the upcoming Quadrennial Defense Review. Table 1 displays the percentage distribution at the end of the Cold War and the last four years in the President's Budget (FY05 and FY06 percentages do not include supplemental requests).⁵²

	FY89	FY03	FY04	FY05	FY06
Army	26.9	27.7	30.1	25.1	23.9
Navy	33.7	28.3	27.2	30.0	30.0
Air Force	32.5	28.6	28.1	29.4	30.4
Defensewide	6.9	15.4	14.6	15.7	15.8

TABLE 1: DOD BUDGET AUTHORITY COMPONENT PERCENTAGES

This table indicates that it will be difficult for the Army to receive adequate investment resources from the other services to reach the average "cost risk" projected investment demand of \$53 billion over the 2010-2022 period. In FY04 (the last year in the table that includes the supplemental requests), the Army received a relatively high percentage (30 percent) of the DoD budget (historically the Army's percentage is below 25 percent). To reach the average "cost risk" projected invested demand of \$53 billion per year, the Army would have to average \$29 billion per year in additional investment resources above its FY04 investment amount of \$24 billion. The Army would need approximately 37 percent of the DoD budget each year, an unprecedented percentage for the Army, to attain the additional resources.

THE ARMY'S DILEMMA

The Army's affordability issues, caused by the federal budget outlook (pressures on discretionary spending) and the difficulty in finding offsets to meet the projected funding demands beyond the FYDP, will severely limit the pace of transformation (i.e., conversion to future forces). Assuming zero real growth in the Army's investment area (a reasonable assumption based on discretionary spending pressures), the Army would be able to field one FCS-equipped unit of action per year. This statement is based on the Army's projected FCS investment of \$6 billion in 2011 (the end of the current FYDP). The cost for each FCS-equipped unit of action was \$4.5 billion at the FCS Milestone B decision. As previously mentioned, this

cost estimate (\$4.5 billion) included only 14 of the 18 desired FCS systems. Now, under Schoomaker's adjusted plans, the initial fielding of FCS will include all 18 of the desired systems. The implication is that the cost of each FCS-equipped unit of action will exceed \$4.5 billion even excluding the extraordinary cost growth (70 percent) that is associated with ground combat systems. Unofficially, the Army cost estimate for the initial FCS-equipped unit of action is approximately \$7.5 billion.⁵³ At this cost, the Army will struggle to field one per year.

If the Army begins fielding the FCS-equipped units of action in 2014 (Schoomaker says there is a 70 percent chance that this will happen) and if the Army can equip one unit of action per year with FCS equipment (arguably the most likely fielding rate), the entire active force would be converted by 2056, and the active and reserve forces (77 units of action) would be converted by 2090. For comparison, General Shinseki's original plan converted all active and reserve forces by 2031.⁵⁴

However, the Army has not clearly defined its strategic goals (ends) in terms of how many units of action will receive the full complement of FCS equipment (i.e., all 18 systems). The Army has announced that all units of action will have **some** FCS equipment.⁵⁵ It has not announced how many units of action will have all 18 systems. At the Milestone B decision, the Army's intent was to field 15 FCS-equipped units of action with Increment I FCS.

Regardless of the Army's ends, the rate at which units of action will receive FCS equipment will most likely average one per year. The consequence of this slowed pace of transformation is that the current equipment will remain in the force for decades. The conversion of all units to units of action with some FCS equipment is not possible within any reasonable timeline.⁵⁶

Abrams tanks, Bradley Fighting Vehicles, and Paladin howitzers are examples of equipment that will be around for many years beyond their planned service life. Currently, 75 percent of critical combat systems exceed their expected half-life.⁵⁷ Even assuming a more optimistic fielding rate of two units of action per year, the average age of the Abrams tank fleet in 2020 will be 29 years old and will increase in years thereafter.⁵⁸ Figure 6 shows the CBO's projection of Army ground vehicle aging assuming the more optimistic fielding rate of two units of action per year.⁵⁹

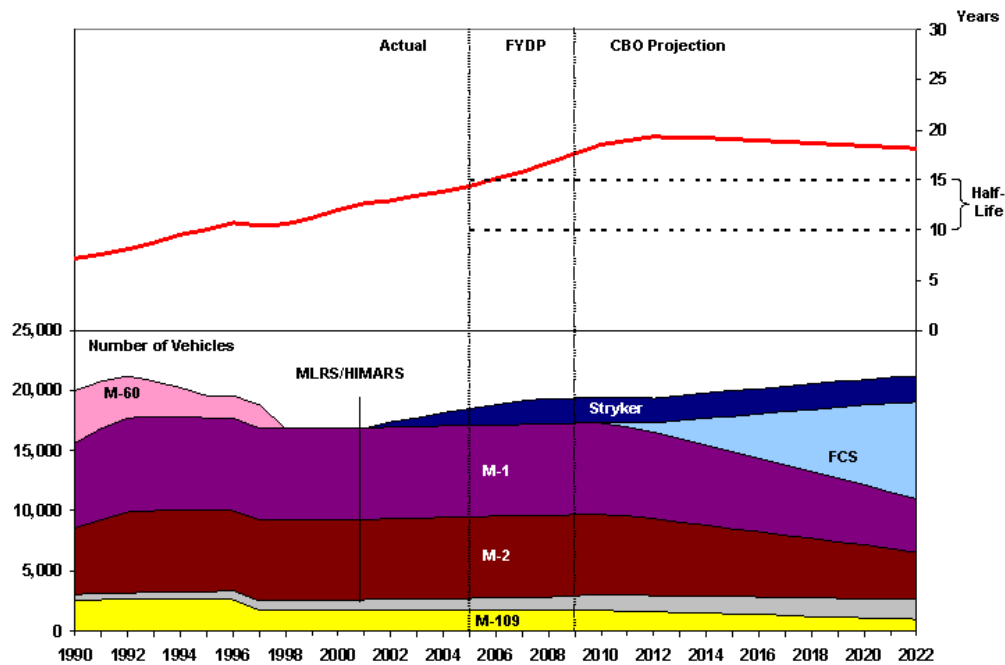


FIGURE 6. AGE AND INVENTORY OF ARMY GROUND COMBAT VEHICLES

The goal is to maintain the average fleet age below 15 years (shown as the “Half-life” in Figure 6). The CBO data shows that if the fielding rate is only one FCS equipped unit of action per year, then the average age will steadily increase (not reach steady-state). The aging of the fleet will have an adverse impact on readiness. Recent RAND research documented the relationship of age on the M1 tank fleet.⁶⁰ One of their findings was that a 14-year-old tank has twice as many critical failures as a new one.

In addition to fleet aging, the on-going operations around the world are stressing the current equipment. Unfortunately, the full impact is not known at this time. Ironically, the on-going operations might have a favorable impact on current equipment. If the Army continues to receive substantial supplemental funding to repair and replace damaged equipment, the Army’s current equipment might be in better condition when the conflict ends than when it began.

In summary, the ends, ways, and means for Army transformation are not in balance. The Army is embarked on a transformation path that does not replace current equipment in a reasonable period of time. The analysis shows that:

- FCS equipped units of action will probably cost more than \$4.5 billion each.
- Increasing Medicare and Social Security costs will probably reduce discretionary spending in future federal budgets.
- The rate at which the Army can equip units of action with FCS equipment will most likely average one unit of action per year.
- The current force, whose average fleet age already exceeds DoD goals, is incurring significant wear and tear in Afghanistan and Iraq, and will be around for many decades.

ALTERNATIVES

This section outlines the Army's risks and possible consequences of continuing with its current transformation plans (the "no change" alternative). It also examines another alternative that would reduce the cost of FCS.

CONTINUE CURRENT PLANS

The Army could continue with its current transformation plans to include General Schoomaker's adjustments. The projections in this paper could be wrong and the Army might equip units of action with FCS equipment according to its current plans. However, the evidence suggests that the Army's current plans are at risk. The conversion to the future force will probably not happen within a reasonable period of time, meaning that the current force's equipment will remain in the inventory for many decades. The second order effect of the Army's transformation plans is that the Army will eventually reallocate resources to the current force to extend its life. The third order effect is that these resources will most likely come from those currently programmed for the future force. This third order effect might either delay the initial fielding of FCS or further slow the pace of conversion to the future force. In either case, the Army is probably pursuing an end that is not affordable. Rebalancing resources between current and future forces is not a viable solution because there are not adequate resources to execute both current and future plans.

As mentioned earlier, if FCS has the same fate as Crusader and Comanche, it could represent an unprecedented lost opportunity in terms of investment dollars. Over the next nine years, the Army is planning to spend more than \$20 billion to develop FCS. Every year that the Department waits to adjust this program (assuming that affordability adjustments are inevitable),

the potential adjustments grow in severity. The risk of continuing with current plans is very large.

REDUCE COSTS

The second option is to restructure the FCS program to reduce its cost to make it affordable over the long-term. By reducing the cost, the Army will increase the likelihood of fielding at least two units of action per year with FCS equipment so that current equipment can be phased out at a rate that maintains the age of the current fleet at a reasonable level (close to the half-life of 15 years). The CBO chart shown in Figure 6 indicates this rate is **at least** two units of action per year. If the Army can attain this rate of conversion, it would avoid the second and third order risks described in the first option (i.e., reallocating resources from FCS to extend the life of the current force).

The Army can achieve this goal if the cost of each FCS-equipped unit of action is reduced to \$3 billion (the current FCS cost estimates range from \$4.5 billion to \$7.5 billion). At this cost, the Army could convert two units of action per year at a cost of \$6 billion. This level of FCS funding would be consistent with the \$6.2 billion programmed at the end of the current FYDP, but it would be significantly less than the out-year levels that are currently anticipated (greater than \$9 billion per year).

To achieve the lower per-unit cost goal, the Army would have to significantly restructure the FCS program. General Schoomaker's emphasis on interdependence provides an opportunity to redefine or restructure the FCS program. He discussed interdependence in his testimony to the House Armed Services Committee in July 2004. In this testimony, he stressed the need for tactical interdependence defined as the need to rely on the capabilities of other services down to the tactical level.⁶¹ By relying on the fires of other services, the Army could reduce the scope of FCS by eliminating or reducing two major FCS systems: the Non-Line of Sight (NLOS) Cannon and the NLOS Launch System.

The NLOS Cannon is one of the eight FCS-manned ground vehicles. Its chassis is common with the other FCS vehicles. It will have a 155mm cannon and will fire the current and future suite of 155mm ammunition.⁶²

The NLOS Launch System will launch long-range precision munitions vertically. The system's primary purpose will be to provide precision attack of high-payoff targets in support of the units of action in concert with other organic, external and joint capabilities. The NLOS-LS under development will have a container/launch unit for the loiter attack missile (LAM) and

precision attack missile (PAM).⁶³ The NLOS Launch System is usually characterized as “rockets in a box.”

Both of these systems provide organic fires for the unit of action. Organic fires have historically been an important and non-negotiable part of Army organizations because soldiers must have fire support 24 hours a day in all weather conditions. General Schoomaker’s statements on interdependence, however, indicate that this may be the time to forego this historic reliance on organic fires:

The decisive nature of land combat underscores a preference for organizational autonomy and redundancy, and tends to prejudice Soldiers against relying on others for essential ingredients of tactical survival and success. In the past, moreover, that prejudice too often has prompted interservice rivalries reflecting concerns far removed from the practical imperatives of the battlefield. A nation at war cannot afford that indulgence...Our collective future is irrefutably joint...that will require us to develop operational concepts, capabilities, and training programs that are joint from the outset, not merely as an afterthought.⁶⁴

The Army must conduct additional research before it can completely eliminate (or reduce) all cannon and rocket organic fire support, and rely solely (or primarily) on tactical air assets. As General Schoomaker testified:

The prerequisites of a commitment to interdependence are broad understanding of the differing strengths and limitations of each service’s capabilities, clear agreement about how those capabilities will be integrated in any given operational setting, and absolute mutual trust that, once committed, they will be employed as agreed.⁶⁵

Even if the Army cannot totally eliminate the NLOS Cannon or NLOS Launch Systems from the FCS family of systems, it may be able to reduce the quantities of each. Clearly, eliminating or reducing the quantities of these systems will reduce the costs of equipping units of action with FCS. These actions, alone, probably would not reduce the cost to \$3 billion. However, the concept of interdependence offers an opportunity to reduce the cost of the future force, and thereby accelerate the conversion to it.

In addition to interdependence, the Army should initiate a new FCS effort to provide new technologies for individual soldiers. Currently, the science and technology program to do this, called Future Force Warrior, is not part of the FCS system of systems. Rather, Future Force Warrior is a “complementary” program to FCS. Recent combat experience in Operation Enduring Freedom and Operation Iraqi Freedom demonstrated the necessity to view soldiers as the ultimate battlefield “platforms.”⁶⁶ Ironically, the Army’s key transformation

program (FCS) does not include the individual soldier as one its platforms. By enhancing the capabilities of individual soldiers in the units of action, the Army might be able to reduce its dependence on other FCS systems in development.

The overall intent of this alternative is to take actions **now**, rather than later, to reduce the cost of FCS. One of the fundamental characteristics of FCS is its system-of-systems design. In other words, its total capabilities should be greater than the sum of its 18+1+1 parts. The systems engineering approach depends on each of the parts to achieve the synergistic effect. The implication is that reducing the scope of FCS later, when the affordability issues are more obvious, is not the same as reducing the scope now. The Army should restructure the program now to ensure the system is effective and to allow other services to change their plans so that interdependence will work.

RECOMMENDATION

The Army should restructure the FCS program to reduce its cost. To convert to the future force in a reasonable amount of time, the Army must be able to field at least two units of action per year. To achieve this fielding rate in light of the inevitable pressures on future discretionary spending, the Army should reduce the cost for each FCS-equipped unit of action to \$3 billion. Whether the Army can achieve this lower cost is unclear at this time. However, the concepts of interdependence and soldier enhancements offer opportunities to work toward this goal.

The Department of Defense has always faced bow waves beyond the FYDP. However, the size of the current bow wave and the almost inevitable pressures on discretionary spending beyond the FYDP imply that the Department should not ignore the long-term implications of its current plans. The current Army transformation plan is too expensive. Its ends, ways, and means are not balanced. The Army should recognize this imbalance now and restructure its plans. It's not too late.

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ENDNOTES

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² The Future Years Defense Plan (FYDP) is the product of the deliberative process known as the Planning Programming Budgeting System (PPBS), which is a strategic decision making process designed to link the national defense strategy to thousands of force structure, modernization, and readiness decisions. The FYDP describes these decisions by laying out a five or six year stream of budget numbers for specific functions or activities.

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⁸ R.L. Brownlee and Peter J. Schoomaker. *The United States Army 2004 Posture Statement*, Posture Statement presented to the 108th Cong., 2d Session (Washington, D.C.: U.S. Department of the Army, 2004), 12.

⁹ Guy C. Swan, III, "The Army's Legislative Program for the 108th Congress," January 2003; available from <http://www.sarca.us/docs/OCLL_Brief_Jan03.ppt>; Internet; accessed 4 October 2004.

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¹¹ The term "Milestone B decision" means a decision to enter into system development and demonstration pursuant to guidance prescribed by the Secretary of Defense for the management of Department of Defense acquisition programs.

¹² General Accounting Office, 11.

¹³ Congressional Budget Office, 2004.

¹⁴ General Accounting Office, 21.

¹⁵ Department of the Army, "Army Transformation," 12.

¹⁶ Brownlee and Schoomaker, 12.

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¹⁹ Ibid., 25.

²⁰ "DoD Authorizes Army to Add 30,000," *AUSA News*, March 2004; available from <<http://www.ausa.org/www.ausanews.nsf>>; Internet; accessed on 3 October 2004.

²¹ Tony Capaccio, "Bush Asks \$419 Billion for Defense in 2006 Budget," *Bloomberg.com*, 3 February 2005; available from <<http://ebird.afis.osd.mil/ebfiles/e20050204350057.html>>; Internet; accessed 4 February 2005.

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